DOCUMENT RESUME

ED 028 441 48 AL 001 843

By-Rosenberg, Sheldon

Semantic Influences on Sentence Production: The Use of Adjectives.

Michigan Univ., Ann Arbor. Center for Research on Language and Language Behavior.
Spons Agency-Office of Education (DHEW), Washington, D.C. Bureau of Research.
Bureau No-BR-6-1784
Pub Date 1 Feb 69
Contract-OEC-3-6-061784-0508
Note-6p.; Report included in Studies in Language and Language Behavior, Progress Report No. VIII.
EDRS Price MF-$0.25 HC-$0.40
Descriptors-*Adjectives, *Association (Psychological), *Semantics, Syntax

Forty-four undergraduates were assigned to two groups of 22 subjects each. The high association (HA) group was given booklets that contained a series of associatively related (free association norms) contrastive adjectives, one pair to a page, while the low association (LA) group was given booklets containing pairs of associatively unrelated adjectives. The task was to use each of the adjective pairs in a sentence with no restrictions placed on the content or syntactic structure of the sentences produced. It was anticipated that the semantic structure of the HA adjectives would lead subjects to use them to modify the same noun less often than LA adjectives, but to use them to modify the same noun in multiple occurrences of the noun (with contrasting referents) more frequently than LA adjectives. The data were analyzed for these measures and for one other, the tendency to use the adjectives to modify completely different nouns. The results tended to support the hypotheses. (Author/DO)

ED028441

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

BR-6-1784
PA-48

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

OE-BR

SEMANTIC INFLUENCES ON SENTENCE PRODUCTION: THE USE OF ADJECTIVES[1]

Sheldon Rosenberg

Center for Research on Language and Language Behavior
The University of Michigan

44 undergraduates were assigned to 2 groups of 22 Ss each. The high association (HA) group was given booklets that contained a series of associatively related (free association norms) contrastive adjectives, one pair to a page, while the low association (LA) group was given booklets containing pairs of associatively unrelated adjectives. The task was to use each of the adjective pairs in a sentence, with no restrictions placed on the content or syntactic structure of the sentences produced. It was anticipated that the semantic structure of the HA adjectives would lead Ss to use them to modify the same noun less often than LA adjectives, but to use them to modify the same noun in multiple occurrences of the noun (with contrasting referents) more frequently than LA adjectives. The data were analyzed for these measures and for one other, the tendency to use the adjectives to modify completely different nouns. The results tended to support the hypotheses.

Rosenberg (1968) has shown that the semantic structure of pairs of nouns (with identical syntactic features) used in a sentence production task influence the syntactic structure of the sentences produced. Specifically, it was found that associatively related nouns (according to free association norms) tend to serve identical grammatical functions in identical underlying sentences to a greater extent than associatively unrelated nouns, while associatively unrelated nouns tend to serve different grammatical functions in different underlying sentences and different grammatical functions in the same underlying sentence to a greater extent than associatively related nouns. These results were accounted for in terms of the high degree of overlap in contextual semantic features that characterizes associatively related nouns with identical syntactic features, i.e., they tend to occur in the same sentential contexts and to have overlapping dictionary meanings while associatively unrelated nouns with identical syntactic features do not.

These results represent, then, one small way in which semantic input can influence the structure of sentence production. However, they are clearly to

AL 001 843

be limited to nouns with identical syntactic features. The success of the sentence production task used by Rosenberg (1968) suggested that it could be used to reveal some of the constraints upon sentence production created by the semantic structure of other form classes as well. The present study was designed to explore this possibility in the case of associatively related and associatively unrelated common adjectives.

Associatively related common adjectives have some interesting characteristics which are likely to influence the way in which they will be used in sentences. For one thing, they tend to be contrastive (Deese, 1965), i.e., polar opposites, and for another, there is some evidence that they--as is the case with the type of nouns referred to above--tend to occur in identical sentential contexts (Deese, 1965), i.e., on different occasions they tend to modify the same noun in the same sentence (e.g., The coffee is too hot; The coffee is too cold). However, one point that Deese's analysis misses is that the nouns that are modified on different occasions by associatively related contrastive adjectives, while they may be identical in surface form may have either quite different referents (e.g., The pretty girl typed well; The ugly girl typed well) or they may have identical referents that have changed in certain respects (e.g., The ugly girl was turned into a pretty girl by the hairdresser). In other words, the nouns that are modified by associatively related contrastive adjectives may themselves by made contrastive by the contexts within which they occur. Thus, if an S is asked to use a pair of associatively related contrastive adjectives in a single sentence, he is not likely to use them to modify the same noun (e.g., The good bad girl, etc.), but he does have the option of using them to modify the same noun in multiple occurrences of the noun in the same or in different underlying sentences (e.g., Bad girls have more fun than good girls).

These expectations were evaluated in the present study using the same sentence production task that Rosenberg (1968) used with nouns.

Method

Subjects. The Ss were 44 undergraduate paid volunteers who were assigned in alternation to two groups of 22 Ss each as they appeared for the experiment. The data were collected in a group-testing situation in three sessions. The N's for the sessions were, respectively, 12, 22, and 10. Half the Ss in each session were assigned to a high association (HA) condition and half to a low association (LA) condition.

Materials. The materials consisted of a booklet and a sheet of instructions. Each page of a booklet contained a pair of adjectives printed at the top, below which were four lines for writing. The HA booklets contained 12 pairs of associatively related (bidirectionally) adjectives while the LA booklets contained 12 pairs of associatively unrelated (bidirectionally) adjectives. The mean relative frequency of elicitation in free association (forward and reverse combined) for the HA pairs was 22.50 % while for the LA pairs it was virtually zero. The adjectives within and between each associative level were matched as closely as possible on Throndike-Lorge (1944) frequency (mostly AA and A words). Local free association norms and the Minnesota norms (Palermo & Jenkins, 1964) were used to select the items. For half the Ss in each condition the adjectives in each pair were printed in one order, and for the other half they were printed in reverse order. The order of pairs within the booklets was varied from S to S. Table 1 contains the stimulus materials of the present study. It will be noted that one member of each HA pair occurred in its LA counterpart.

Insert Table 1 about here

Procedure. The data were collected in a classrcom. After being seated, each S was given a booklet and a copy of the printed instructions. The E then read the instructions aloud while the Ss followed in their copies of the instructions. The Ss' task is described in the instructions which are reproduced below.

SENTENCE PRODUCTION STUDY

INSTRUCTIONS

This is a study of sentence production. Each of you has been given a booklet that contains 12 pairs of adjectives, one pair to a page. Below each pair of adjectives you will find some blank lines on which you are to write during the sentence-production task. Your task, for each page of the booklet, is to make up a sentence that contains the adjectives printed at the top of the page. Please follow these instructions in performing your task:

1. The adjectives must be used as adjectives and not as any other part of speech.

2. Each adjective on a given page must be used only once in the sentence that you make up.

3. Where the two adjectives appear in a given sentence and in what order they appear is entirely up to you. For

example, whether they appear together or at different places in a sentence is for you to decide.

4. The content, length and grammatical complexity of your sentences is entirely up to you.

You may refer back to these instructions at any time. Work as rapidly as you can, but please write neatly. Please keep your eyes on your own booklet and do not do anything that might disturb those around you. As soon as you finish all 12 pages, check to see that you've left no pages blank, turn your booklet over, and remain seated until the others have finished.

Results and Discussion

The sentence productions were scored according to the following categories.

SNSO - Both adjectives modify the same noun in a single occurrence of the noun.

SNMO - Both adjectives modify the same noun but in a multiple (double) occurrence of the noun in the underlying sentences. The referents of the nouns in this category are either different or they represent semantic changes from one occurrence to the next.

DN - Each adjective modifies a completely different noun.

In each group there were a few sentences which could not be scored according to these categories because one or both of the adjectives had been used as an adverb or as a noun. The mean number of productions in the SNSO, SNMO and DN categories respectively were, in Group HA, 1.32, 4.45, and 6.09, while in Group LA they were 2.91, .50, and 8.23. It is clear from these results that Ss in both groups chose most frequently to use the adjectives to modify different nouns. The reason for this tendency was not apparent. However, it is clear also that the groups differed in the predicted direction on the SNSO and SNMO measures. They differed also on the DN measure, but no prediction had been made here. For the SNSO measure, $t(42) = 2.94$, $p < .005$, one-tailed. In the case of the SNMO measure, the difference between the groups was so large as to make a statistical comparison superfluous. For the DN measure, $t(42) = 2.78$, $p < .01$, two-tailed.

These results extend the work of Deese (1965), and indicate that contrastive adjective associations may develop not only as a result of the adjectives having modified the same noun on different occasions in identical sentential contexts, but also as a result of the adjectives having modified contrasting referents of the same noun. In addition, we have further evidence of the ways

in which the structure of the semantic input to sentence production influences the structure of the sentences produced. Of course, it is intuitively obvious that the major semantic determinants of the structure of sentence productions are not organized in adjectival terms. But the present results and those of Rosenberg (1968) indicate that if we can specify something about the structure of the semantic input to sentence production (the idea behind the utterance, if you will), we may be able to make some predictions about the formal features of the sentences produced.

It is not clear at present as to why the two groups should have differed with respect to the third measure, namely, the tendency for the adjectives to modify different nouns. However, it is possible that, for some LA adjective pairs, Group LA found it difficult to modify the same noun in a single occurrence of the noun. This, combined with the low score of Group LA in the SNMO category, may have made the DN category the simplest alternative.

References

Deese, J. The structure of associations in language and thought. Baltimore: Johns Hopkins University Press, 1965.

Palermo, D. S., & Jenkins, J. J. Word association norms: grade school through college. Minneapolis: University of Minnesota Press, 1964.

Rosenberg, S. Semantic constraints upon the syntactic structure of sentence productions. Paper presented at the Psychonomic Society Meetings, St. Louis, Mo., October, 1968.

Thorndike, E. L., & Lorge, I. The teacher's word book of 30,000 words. New York: Columbia University Teachers College, Bureau of Publications, 1944.

Footnote

[1]The research reported herein was performed in part pursuant to Contract OEC-3-6-061784-0508 with the U. S. Department of Health, Education, and Welfare, Office of Education, under the provisions of P. L. 83-531, Cooperative Research, and the provisions of Title VI, P. L. 85-864, as amended. This research report is one of several which have been submitted to the Office of Education as Studies in Language and Language Behavior, Progress Report No. VIII, February 1, 1969.

Table 1

HA and LA Adjective Pairs

HA	LA
passive - active	passive - thirsty
good - bad	good - dull
big - little	clear - little
dirty - clean	dirty - kind
light - dark	full - dark
dry - wet	wise - wet
slow - fast	slow - plain
high - low	thick - low
poor - rich	sad - rich
pretty - ugly	strong - ugly
wrong - right	wrong - new
sweet - sour	sweet - rough